

IN THE CLAIMS:

1. (Currently Amended) An electrode material for an anode of a rechargeable lithium battery, containing a particulate comprising an amorphous $\text{Sn} \cdot \text{A} \cdot \text{X}$ alloy with a substantially non-stoichiometric ratio composition, wherein in said formula $\text{Sn} \cdot \text{A} \cdot \text{X}$, A indicates at least one kind of an element selected from the group consisting of transition metal elements, X indicates at least one kind of an element selected from the group consisting of N, Mg, Ba, Sr, Ca, La, Ce, Si, Ge, C, P, B, Pb, Bi, Sb, Al, Ga, In, Tl, Zn, Be, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, As, Se, Te, Li and S, where the element X is optionally present and the content of the constituent element Sn of the amorphous $\text{Sn} \cdot \text{A} \cdot \text{X}$ alloy is $\text{Sn}/(\text{Sn} + \text{A} + \text{X}) = 20$ to 80 atomic%, wherein said particulate comprising said amorphous $\text{Sn} \cdot \text{A} \cdot \text{X}$ alloy has a specific surface area of more than $1 \text{ m}^2/\text{g}$.

2. (Previously Presented) An electrode material for an anode according to claim 1, wherein said amorphous $\text{Sn} \cdot \text{A} \cdot \text{X}$ alloy has a peak in a range of $2\theta = 25^\circ$ to 50° in X-ray diffraction pattern obtained using a Cu $K\alpha$ radiation source, having a half width of more than 0.2° .

3. (Previously Presented) An electrode material for an anode according to claim 1, wherein said amorphous $\text{Sn} \cdot \text{A} \cdot \text{X}$ alloy has a peak in a range of $2\theta = 25^\circ$ to 50° in X-ray diffraction pattern obtained using a Cu $K\alpha$ radiation source, having a half width of more than 0.5° .

4. (Previously Presented) An electrode material for an anode according to claim 1, wherein said amorphous Sn•A•X alloy has a peak in a range of $2\theta = 25^\circ$ to 50° in X-ray diffraction pattern obtained using a Cu K α radiation source, having a half width of more than 1.0° .

5. (Previously Presented) An electrode material for an anode according to claim 1, wherein said amorphous Sn•A•X alloy has a peak in a range of $2\theta = 40^\circ$ to 50° in X-ray diffraction pattern obtained using a Cu K α radiation source, having a half width of more than 0.5° .

6. (Previously Presented) An electrode material for an anode according to claim 1, wherein said amorphous Sn•A•X alloy has a peak in a range of $2\theta = 40^\circ$ to 50° in X-ray diffraction pattern obtained using a Cu K α radiation source, having a half width of more than 1.0° .

7. (Original) An electrode material for an anode according to claim 1, wherein said particulate comprising said amorphous Sn•A•X alloy has a crystallite size calculated from X-ray diffraction analysis, which is less than 500\AA .

8. (Original) An electrode material for an anode according to claim 1, wherein said particulate comprising said amorphous Sn•A•X alloy has a crystallite size calculated from X-ray diffraction analysis, which is less than 200\AA .

9. (Original) An electrode material for an anode according to claim 1, wherein said particulate comprising said amorphous Sn•A•X alloy has a crystallite size calculated from X-ray diffraction analysis, which is less than 100 Å.

10. (Original) An electrode material for an anode according to claim 1, wherein said particulate comprising said amorphous Sn•A•X alloy has an average particle size in a range of from 0.5 µm to 20 µm.

11. (Currently Amended) An electrode material for an anode according to claim 1, wherein said particulate comprising said amorphous Sn•A•X alloy has an average particle size in a range of from ~~0.5 µm~~ 0.5 µm to 10 µm.

12. (Currently Amended) An electrode material for an anode according to claim 1, wherein said transition metal element comprises at least one kind of an element selected ~~from a~~ from the group consisting of Cr, Mn, Fe, Co, Ni, Cu, Mo, Tc, Ru, Rh, Pd, Ag, Ir, Pt, Au, Ti, V, Y, Sc, Zr, Nb, Hf, Ta, and W.

13. (Original) An electrode material for an anode according to claim 1, wherein said particulate comprising said amorphous Sn•A•X alloy contains said alloy in an amount of more than 30% by weight.

14. (Original) An electrode material for an anode according to claim 1, wherein said particulate comprising said amorphous $\text{Sn} \cdot \text{A} \cdot \text{X}$ alloy contains a binder comprising a polymer which is either water-soluble or water-insoluble.

15. (Original) An electrode material for an anode according to claim 14, wherein said particulate comprising said amorphous $\text{Sn} \cdot \text{A} \cdot \text{X}$ alloy contains said alloy in an amount in a range of from 80 % by weight to 100 % by weight.

16. (Original) An electrode material for an anode according to claim 14, wherein the amount of said binder contained is in a range of from 1 % by weight to 10 % by weight.

[Claims 17 to 22. (Cancelled).

¹⁷
~~23.~~ (Currently Amended) An electrode material for an anode of a rechargeable lithium battery, containing a particulate comprising an amorphous $\text{Sn} \cdot \text{A} \cdot \text{X}$ alloy with a substantially non-stoichiometric ratio composition, wherein in said formula $\text{Sn} \cdot \text{A} \cdot \text{X}$, A indicates at least one kind of an element selected from the group consisting of transition metal elements, and X indicates at least one kind of an element selected from the group consisting of [[O, F,]] N, Mg, Ba, Sr, Ca, La, Ce, Si, Ge, C, P, B, Pb, Bi, Sb, Al, Ga, In, Tl, Zn, Be, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, As, Se, Te, Li and S, where the element X is optionally present and the content of the constituent element Sn of the amorphous $\text{Sn} \cdot \text{A} \cdot \text{X}$ alloy is $\text{Sn}/(\text{Sn} + \text{A} + \text{X}) = 20$ to 80 atomic%, and wherein

said particulate comprising said amorphous Sn•A•X alloy contains carbon element, and
said particulate comprising said amorphous Sn•A•X alloy has a specific surface area of
more than 1 m²/g.

18
24.

(Currently Amended) An electrode material for an anode of a

rechargeable lithium battery, containing a particulate comprising an amorphous Sn•A•X
alloy with a substantially non-stoichiometric ratio composition, wherein in said formula
Sn•A•X, A indicates at least one kind of a element selected from the group consisting of
transition metal elements, and X indicates according to claim 1, wherein said amorphous
Sn•A•X alloy contains at least one kind of an element selected from a group (a) consisting
of Pb, Bi, Al, Ga, In, Tl, Zn, Be, Mg, Ca, and Sr; a group (b) consisting of rare earth
elements[[in X]]; and a group (c) consisting of metalloide elements [[in X]], wherein said
group (b) consisting of rare earth elements consists of La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy,
Ho, Er, Tm, Yb, and Lu, and said group (c) consisting of matalloide elements consists of B,
C, Si, P, Ge, As, Se, Sb, and Te, where the content of the constituent element Sn of the
amorphous Sn•A•X alloy is Sn/ (Sn + A + X) = 20 to 80 atomic% and said particulate
comprising said amorphous Sn•A•X has a specific surface area of more than 1 m²/g.

19
25.

(Original) An electrode material for an anode according to claim

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24, wherein said amorphous Sn•A•X alloy contains two kinds of elements selected from
said group (a), said group (b), and said group (c).

18 20
26. (Original) An electrode material for an anode according to claim
24, wherein said amorphous Sn•A•X alloy contains three kinds of elements selected from
said group (a), said group (b), and said group (c).

27. (Cancelled).

21
28. (Currently Amended) An electrode material for an anode of a
rechargeable lithium battery, containing a particulate comprising an amorphous Sn•A•X
alloy with a substantially non-stoichiometric ratio composition wherein in said formula
Sn•A•X, A indicates at least one kind of an element selected from the group consisting of
transition metal elements, and X indicates, according to claim 1, wherein said amorphous
Sn•A•X alloy contains one kind of an element selected from the [[a]] group consisting of
Pb, Bi, Al, Ga, In, Tl, Zn, Be, Mg, Ca, and Sr and one kind of an element selected from
[[a]] the group consisting of rare earth elements in X, wherein said group consisting of rare
earth elements consists of La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, and Lu
wherein the content of the constituent element of element Sn of the amorphous Sn•A•X
alloy is $\text{Sn} / (\text{Sn} + \text{A} + \text{X}) = 20 \text{ to } 80 \text{ atomic\%}$.

29. (Cancelled).

22
30. (Currently Amended) An electrode material for an anode according
to claim 1, wherein said amorphous Sn•A•X alloy contains of a rechargeable lithium
battery, containing a particulate comprising an amorphous Sn•A•X alloy with a

substantially non-stoichiometric ratio composition, wherein in said amorphous $\text{Sn} \cdot \text{A} \cdot \text{X}$, A indicates at least one kind of a element selected from the group consisting transition elements, and X indicates one kind of an element selected from [[a]] the group consisting of Pb, Bi, Al, Ga, In, Tl, Zn, Be, Mg, Ca, and Sr and one kind of an element selected a group consisting of metalloide elements in X, wherein said group consisting of metalloide elements consists of B, C, Si, P, Ge, As, Se, Sb, and Te, where the content of the constituent element Sn of the amorphous $\text{Sn} \cdot \text{A} \cdot \text{X}$ alloy is $\text{Sn} / (\text{Sn} + \text{A} + \text{X}) = 20$ to 80 atomic%, and said particulate comprising said amorphous $\text{Sn} \cdot \text{A} \cdot \text{X}$ alloy ^{has} a specific surface area of more than $1 \text{ m}^2/\text{g}$.

31. (Cancelled).

23

32. (Currently Amended) An electrode material for an anode according to claim 1, wherein said amorphous $\text{Sn} \cdot \text{A} \cdot \text{X}$ alloy contains of a rechargeable lithium battery, containing a particulate comprising an amorphous $\text{Sn} \cdot \text{A} \cdot \text{X}$ alloy with a substantially non-stoichiometric ratio composition, wherein in said formula $\text{Sn} \cdot \text{A} \cdot \text{X}$, A indicates at least one kind of an element selected from the group consisting of transition metal elements, and X indicates at least one kind of an element selected from [[a]] the group consisting of metalloide elements [[in X]] and one kind of an element selected from the group consisting of rare earth elements [[in X]], wherein said group consisting of rare earth elements consists of La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, and Lu, and said group consisting of metalloide elements consists of B, C, Si, P, Ge, As, Se, Sb,

and Te, where the content of the constituent element Sn of the amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy is $\text{Sn}/(\text{Sn} + \text{A} + \text{X}) = 20$ to 80 atomic%.

33. (Cancelled).

24
34.

(Currently Amended) An electrode material for an anode according to claim 1 of a rechargeable lithium battery, containing a particulate comprising an amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy with a substantially non-stoichiometric ratio composition, wherein in said amorphous formula $\text{Sn}\cdot\text{A}\cdot\text{X}$, A indicates alloy contains one kind of an element selected from ~~[[a]]~~ the group consisting of Si, Ge, Al, Zn, Ca, La, and Mg, and one kind of an element selected from a group consisting of Co, Ni, Fe, Cr, and Cu, and X indicates one kind of an element selected from the group consisting of Si, Ge, Al, Zn, Ca, La, and Mg, where the content of the constituent element Sn of the amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy is $\text{Sn}/(\text{Sn} + \text{A} + \text{X}) = 20$ to 80 atomic%.


25
35.

(Currently Amended) An electrode material for an anode according to claim 34 ~~[[1]]~~, wherein said amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy further contains one kind of an element selected from ~~[[a]]~~ the group consisting of Si, Ge, Al, Zn, Ca, La, and Mg, one kind of an element selected from a group consisting of Co, Ni, Fe, Cr, and Cu, and one kind of an element selected from a group consisting of C, B, and P.

36. (Cancelled).

³⁰
~~37~~. (Currently Amended) An electrode material for an anode according to [claim 1] ^{21, 23, 24, 25, 26} ~~any of claims 28, 32, 34, 35 and 40~~, wherein said particulate comprising said amorphous Sn•A•X alloy has a specific surface area of more than 1 m²/g.


³¹
~~38~~. (Currently Amended) An electrode material for an anode according to [claim 1] ^{17, 18, 21, 22, 23, 24, 25, 26} ~~any of claims 1, 23, 24, 28, 30, 32, 34, 35 and 40~~, wherein said particulate comprising said amorphous Sn•A•X alloy has a specific surface area of more than 5 m²/g.


³²
~~39~~. (Currently Amended) An electrode material for an anode according to [claim 1] ^{17, 18, 21, 22, 23, 24, 25, 26} ~~any of claims 1, 23, 24, 28, 30, 32, 34, 35 and 40~~, wherein said amorphous Sn•A•X alloy contains Li element in an amount in a range of from 2 atomic % to 30 atomic %.

²⁶
~~40~~. (Currently Amended) An electrode material for an anode of a rechargeable lithium battery, containing a particulate comprising an amorphous Sn•A•X alloy with a substantially non-stoichiometric ratio composition, wherein in said formula Sn•A•X, A indicates at least one kind of an element selected from the group consisting of transition metal elements, X indicates at least one kind of an element selected from the group consisting of [[O, F]], N, Mg, Ba, Sr, Ca, La, Ce, Si, Ge, C, P, B, Pb, Bi, Sb, Al, Ga, In, Tl, Zn, Be, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, As, Se, Te, Li and S, where the element X is optionally present and the content of the constituent element Sn of the amorphous Sn•A•X alloy is Sn/(Sn+A+X) = 20 to 80 atomic %, and wherein said

amorphous Sn•A•X alloy contains at least one kind of an element selected from [[a]] the group consisting of N and S in an amount in a range of from 1 atomic % to 30 atomic %.

³³
~~41.~~ (Currently Amended) An electrode structural body comprising said electrode material for an anode, containing said particulate comprising said amorphous Sn•A•X alloy defined in [claim 1] ^{17 18 21 22 23 24 25 26} any of claims 1, 23, 24, 28, 30, 32, 34, 35, and 40 and a collector comprising a material incapable of being alloyed with lithium in electrochemical reaction.


^{42.} (Cancelled).

³⁴
~~43.~~ (Original) An electrode structural body according to claim ³³~~41~~, wherein the amount of said particulate comprising said amorphous Sn•A•X alloy in said electrode structural body is at least 25 % by weight.

³⁵
~~44.~~ (Original) An electrode structural body according to claim ³³~~41~~, wherein said particulate comprising said amorphous Sn•A•X alloy in said electrode structural body contains at least 30 % by weight of said amorphous Sn•A•X alloy.

³⁶
~~45.~~ (Original) An electrode structural body according to claim ³³~~41~~, wherein said electrode structural body has an electrode material layer comprising said electrode material for an anode and a binder on said collector.

~~37~~
~~46.~~

(Original) An electrode structural body according to claim ³⁶~~45~~,

wherein said binder comprises a polymer which is either water-soluble or water-insoluble.

~~38~~
~~47.~~

(Currently Amended) A rechargeable lithium battery having an

anode, an electrolyte, and a cathode and in which oxidation-reduction reaction of lithium is

used, characterized in that said anode comprises said electrode structural body defined in

any of claims ³³~~41~~ and ~~43~~ to ~~46~~ claim ³³~~41~~.

~~39~~
~~48.~~

(Original) A rechargeable lithium battery according to claim ³⁸~~47~~,

wherein said cathode comprises a lithium element-containing material having a function of

deintercalating lithium ion and intercalating said lithium ion in charge-and-discharge

reaction.

~~40~~
~~49.~~

(Original) A rechargeable lithium battery according to claim ³⁸~~47~~,

wherein said lithium element-containing material as the constituent material of said

cathode contains an amorphous phase.

~~41~~
~~50.~~

(Original) A rechargeable lithium battery according to claim ³⁸~~47~~,

wherein said lithium element-containing material as the constituent material of said

cathode contains a metal oxide material containing amorphous phase.

~~42~~
~~51.~~

(Currently Amended) A process for producing an electrode

structural body for a rechargeable lithium battery, said process is characterized by having a

step of arranging said electrode material for an anode containing said particulate
comprising said amorphous Sn•A•X alloy defined in any of claims 1, 23, 24, 28, 30, 32,
34, 35, and 40 [claim 1] on a collector.

43
52. (Original) A process for producing an electrode structural body
for a rechargeable lithium battery according to claim 51, wherein said step includes a step
of arranging said particulate comprising said amorphous Sn•A•X alloy on said collector by
way of press forming.

44
53. (Original) A process for producing an electrode structural body
for a rechargeable lithium battery according to claim 51, wherein said step includes a step
of preparing a paste material by mixing said particulate comprising said amorphous
Sn•A•X alloy with a binder and arranging said paste material on said collector.

45
54. (Original) A process for producing an electrode structural body
for a rechargeable lithium battery according to claim 53, wherein a binder comprising a
water-soluble polymer material is used as said binder.

46
55. (Currently Amended) A process for producing a rechargeable
lithium battery having an anode, an electrolyte, and a cathode and in which
oxidation-reduction reaction of lithium is used, said process is characterized by having a
step of forming said anode by arranging said electrode material for an anode containing

said particulate comprising said amorphous Sn•A•X alloy defined in [claim 1] any of

^{17 18 21 22 23 24 25 26}
claims 1, 23, 24, 28, 30, 32, 34, 35, and 40 on a collector.

⁴⁷
56. (Original) A process for producing a rechargeable lithium battery according to claim ⁴⁶~~55~~, wherein said step of forming said anode includes a step of arranging said particulate comprising said amorphous Sn•A•X alloy on said collector by way of press forming.

⁴⁸
57. (Original) A process for producing a rechargeable lithium battery according to claim ⁴⁶~~55~~, wherein said step of forming said anode includes a step of preparing a paste material by mixing said particulate comprising said amorphous Sn•A•X alloy with a binder and arranging said paste material on said collector.

⁴⁹
58. (Original) A process for producing a rechargeable lithium battery according to claim ⁴⁸~~57~~, wherein a binder comprising a water-soluble polymer material is used as said binder.

⁵⁰
59. (New) An electrode material for an anode according to any of claims ^{17 18 22 23 24 25 26}~~23, 24, 30, 32, 34, 35~~ and ~~40~~, wherein said amorphous Sn•A•X alloy has a peak in a range of $2\theta = 25^\circ$ to 50° in X-ray diffraction pattern obtained using a $\text{CuK}\alpha$ radiation source, having a half width of more than 0.2° .

51
60. (New) An electrode material for an anode according to any of
claims ~~17, 18, 22, 23, 24, 25, 26~~ ~~23, 24, 30, 32, 34, 35 and 40~~, wherein said amorphous $\text{Sn} \cdot \text{A} \cdot \text{X}$ alloy has a peak in a
range of $2\theta = 25^\circ$ to 50° in X-ray diffraction pattern obtained using a $\text{CuK}\alpha$ radiation
source, having a half width of more than 0.5° .

52
61. (New) An electrode material for an anode according to any of
claims ~~17, 18, 22, 23, 24, 25, 26~~ ~~23, 24, 30, 32, 34, 35 and 40~~, wherein said amorphous $\text{Sn} \cdot \text{A} \cdot \text{X}$ alloy has a peak in a
range of $2\theta = 25^\circ$ to 50° in X-ray diffraction pattern obtained using a $\text{CuK}\alpha$ radiation
source, having a half width of more than 1.0° .

53
62. (New) An electrode material for an anode according to any of
claims ~~17, 18, 22, 23, 24, 25, 26~~ ~~23, 24, 30, 32, 34, 35 and 40~~, wherein said amorphous $\text{Sn} \cdot \text{A} \cdot \text{X}$ alloy has a peak in a range of
 $2\theta = 40^\circ$ to 50° in X-ray diffraction pattern obtained using a $\text{CuK}\alpha$ radiation source, having
a half width of more than 0.5° .

54
63. (New) An electrode material for an anode according to any of
claims ~~17, 18, 22, 23, 24, 25, 26~~ ~~23, 24, 30, 32, 34, 35 and 40~~, wherein said amorphous $\text{Sn} \cdot \text{A} \cdot \text{X}$ alloy has a peak in a
range of $2\theta = 40$ to 50° in X-ray diffraction pattern obtained using a Cu radiation source,
having a half width of more than 1.0° .

55
64. (New) An electrode material for an anode according to any of
claims ~~17, 18, 22, 23, 24, 25, 26~~ ~~23, 24, 30, 32, 34, 35 and 40~~, wherein said particulate comprising said amorphous

Sn•A•X alloy has a crystallite size calculated from X-ray diffraction analysis, which is less than 500 Å.

56
65. (New) An electrode material for an anode according to any of
17 18 22 23 24 25 26
claims 23, 24, 30, 32, 34, 35 and 40, wherein said particulate comprising said amorphous

Sn•A•X alloy has a crystallite size calculated from X-ray diffraction analysis, which is less than 200 Å.

57
66. (New) An electrode material for an anode according to any of
17 18 22 23 24 25 26
claims 23, 24, 30, 32, 34, 35 and 40, wherein said particulate comprising said amorphous

Sn•A•X alloy has a crystallite size calculated from X-ray diffraction analysis, which is less than 100 Å.

58
67. (New) An electrode material for an anode according to any of
17 18 22 23 24 25 26
claims 23, 24, 30, 32, 34, 35 and 40, wherein said particulate comprising said amorphous

Sn•A•X alloy has an average particle size in a range of from 0.5 μm to 20 μm.

59
68. (New) An electrode material for an anode according to any of
17 18 22 23 24 25 26
claims 23, 24, 30, 32, 34, 35 and 40, wherein said particulate comprising said amorphous

Sn•A•X alloy has an average particle size in a range of from 0.5 μm to 10 μm.

66
69. (New) An electrode material for an anode according to any of
17 18 22 23 24 25 26
claims 23, 24, 30, 32, 34, 35 and 40, wherein said particulate comprising said amorphous
Sn•A•X alloy contains said alloy in an amount of more than 30% by weight.

60
70. (New) An electrode material for an anode according to any of
17 18 22 23 24 25 26
claims 23, 24, 30, 32, 34, 35 and 40, wherein said particulate comprising said amorphous
Sn•A•X alloy contains a binder comprising a polymer which is either water-soluble or
water-insoluble.

62
71. (New) An electrode material for an anode according to claim 70,
wherein said particulate comprising said amorphous Sn•A•X alloy contains said alloy in an
amount in a range of from 80 % by weight to 100 % by weight.

63
72. (New) An electrode material for an anode according to claim 70,
wherein the amount of said binder contained is in a range of from 1 % by weight to 10 %
by weight.

27
73. (New) An electrode material for an anode according to claim 40,
wherein said particulate comprising said amorphous Sn•A•X alloy has a specific surface
area of more than 1 m²/g.

28

~~74.~~

(New) An electrode material for an anode according to claim ~~40~~²⁶,

wherein said particulate comprising said amorphous Sn•A•X alloy has a specific surface area of more than 5 m²/g.

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~~75.~~

(New) An electrode material for an anode according to claim ~~40~~²⁶,

wherein said amorphous Sn•A•X alloy contains Li element in an amount in a range of from 2 atomic % to 30 atomic %.